

Mount, III, E. M., "Development and Utilization of High Barrier Packaging Films"  
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Giles, Jr., H. F., Wagner, Jr., J. R., Mount III, E. M., Extrusion: The Definitive  
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Norwich, New York, (2005)

Several Patent Applications Pending.

## EXHIBIT 2

### DOCUMENTS REVIEWED

I have reviewed all of the documents disclosed in this report. Set forth below is a list intended to capture those materials in list form.

1. US Patent 4,755,419, "Oxygen Barrier Oriented Shrink Film", Gautam P. Shah; Assignee W. R. Grace & Co., Cryovac Div, July 5, 1988
2. European Patent Application 0 063 006 A1, "EVOH copolymer blend, a process for producing a composite film therefrom and the composite film per se.", Oderzynski, T. W., Knott, J. E., Applicant American Can Company, 20/10/1982
3. US Patent 4,746,562, "Packaging Film", Ennis M. Fant, Assignee W. R. Grace & Co., Cryovac Div, May 24, 1988
4. US Patent 4,361,628, "Coextruded Film of Polypropylene Blend And Nylon", Duane A. Krueger, Thomas W. Oderzynski, Assignee American Can Company, Nov 30, 1982
5. US Patent 4,608,286, "Gas Barrier Multilayer packaging Material Having Excellent Flexing Endurance", Yasuo Motoishi, Kenji Satoh, Kyoichiro Ikari, Assignee Kuraray Co. Ltd., Aug 26, 1986
6. US Patent 5,055,355, "Oriented Film Laminates Of Polyamides and Ethylene Vinyl Alcohol Copolymers", Ferdinand A. DeAntonis, William H. Murrel, Alfieri Degrassi, Assignee Allied-Signal Inc., Oct 8 1991
7. US Patent 4,511,610, "Multi-Layer Drawn plastic Vessel", Jinichi Yazaki, Kozaburo Sakano, assignee Toyo Seikan Kaisha Ltd., Apr 16, 1985
8. US Patent 4,284,674, "Thermal Insulation", Nicholas Sheptek, Assignee American Can Company, Aug 18, 1981
9. A. L. Blackwell, "Ethylene Vinyl Alcohol Resins As A Barrier Material In Multi-Layer Packages", J. Plastic Film & Sheeting, Vol. 1, (1985), pp 205-214
10. Rolf Hessenbruch, "recent Development In Blown Film Coextrusion", Tappi Proceedings, Book 1, 1984 Polymers, Laminations and Coatings Conference, Sept 24-26 (1984), pp 85-94
11. US Patent 4,532,189, "Linear Polyethylene Shrink Film", Walter B. Mueller, Assignee W. R. Grace, Jul 30, 1985
12. US Patent 4,398,635, "Child-Proof Medication Package", Edmund Hirt, assignee American Can Company, Aug 16, 1983
13. File Wrapper for US patent 4,755,419

14. US Patent 4,572,854, "Multilayer Film With A Gas and Aroma Barrier Layer and A Process For The Preparation and Application Thereof", H. Dallmann, H. J. Palmer, assigneeH Hoechst Aktiengesellschaft, Feb 25, 1986
15. Translation of: Utility Model Application Publication Number: 60-27000, application number 54-84842, Mamoru Yoshimoto, Kyutaro Taleuchi, applicant Sumitomo Bakelite Co., Ltd., publication data August 14, 1985
16. **IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE**, CRYOVAC, INC., Plaintiff/Counter-Defendant. vs. PECHINEY PLASTICC PACKAGING, INC., Defendant/Counter-Plaintiff, Civil Action No. 04-1278, Hon. Kent A. Jordan, "**PECHINEY PALSTIC PACKAGING INC.'S RESPONSE TO CRYOVAC'S FIRST SET OF INTERROGATORIES (NOS. 1-8) TO PECHINEY**"
17. US Patent 4,436,778, "Multilayer Tubular Body With Uncentered Barrier Layer", J. N. Dugal, assignee Ball Corporation, Mar 13, 1984
18. US Patent 4,501,798, "unbalanced Oriented Multiply Layer Film", M. Koschak, S. S. Super, J. F. Jesse, assignee American can Company, Feb 26, 1985
19. US Patent 4,355,721, "Package For Food Products", J. E. Knott, M. S. Koschak, J. P. Adams, assignee American Can Company, Oct 26, 1982
20. US Patent 4,532,189, "Linear Polyethylene Shrink Films", W. B. Mueller, Assignee W. R. Grace & Company., Cryovac Div., Jul 30, 1985
21. J. A. Sneller, "New Prospects in Packaging Markets" Modern Plastics, August 1984, pp 39-41
22. anon, "Nylon Film Effective Packaging", Plastics Corner, The Journal of Commerce, Dec 14, 1984
23. Development Specifications from American National Can; DB-3200-1, DB-3200-2, DB-3200-3, DB-3201-1, DB-3201-2, DB-3201-3, DB-3201-4, DB-3300-1, DB-3300-2, DB-3300-3, DB-3300-4, DB-3301-1, DB-3301-2, DB-3350-1, DB-3350-2, DB-3350-3, DB-3350-4, DB-3351-1, DB-3351-2, DZ-9000-1, DZ-9001-1, DZ-9001-2, DZ-9002-1, DZ-9002-2, DZ-9500-1, DZ-9500-2, DZ-9501-1, DZ-9501-2, DZ-9502-1, DZ-9502-2, DM-0200-1, DM-0201-1, DM-0250-1, DM-0251-1, B-3201-A, B-3300-A

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24. US Patent 4,640,852, "Multiple Layer Films Containing Oriented layers Of Nylon And Ethylene Vinyl Alcohol Copolymer", W. F. Ossian, assignee American Can Company, Feb 3, 1987
25. Earl Hatley, "Performance of Nylon, Technical Papers Society of Plastics Engineers Regional Technical Conference "Optimize Barrier Coextrusion", Sept 5-6, 1985
26. W.R.R. Park, Plastics Film Technology, Plastics Applications Series, W.R.R. Park Editor, Van Nostrand Reinhold Company, New York (1969)

27. The Science and Ttechnology of Polymer Films, Vol. I, O. J. Sweeting, ed, Interscience Publishers, New York, (1968)
28. C. J. Benning, Plastic Films For Packaging: Technology, Applications and Process Economics, Technomic Publishing Co., Inc, Lancaster, PA., (1983)
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30. Pechiney's Second Supplemental Response to Cryovac's First Set of Interrogatories
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# EXHIBIT 23

## **EXHIBIT 23**

**REDACTED IN ITS ENTIRETY**

# EXHIBIT 24

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## armor plate

**ar'mör plâte**, plates of iron or steel for covering the sides of a ship, tank, etc.

**ar'mör-plât'ed**, a. covered with armor plate.

**ar'mör-y**, *n.* [Fr. *armoire*; OFr. *armoire*, *armarie*, from *L. armarium*, a place for keeping arms.]

1. a place where arms and instruments of war are kept; arsenal.
2. armor. [Archaic.]
3. armorial bearings. Archaic.
4. the art of heraldry.
5. a place where firearms are manufactured.
6. a building containing the drill hall and offices of a unit of the National Guard.

**ar'môur**, *n.* and *v.t.* armor: the British spelling.

**ar'môur-ër**, *n.* armorer: the British spelling.

**ar'môur-y**, *n.* armory: the British spelling.

**ar'mô-zeen'**, **ar'mô-zine'**, *n.* [Fr. *armoisin*; OFr. *armesin*; *L. ermesinus*, taffeta.] a heavy silk, generally black, formerly used in making robes for the clergy.

**ar'm-pit**, *n.* the hollow place or cavity under the arm at the shoulder; the axilla.

**arms**, *n.pl.* [ME. *armes*; Fr. *arme*, *pl. armes*, from *L. arma*, arms, equipment.]

1. weapons.
2. military science; warfare; fighting; as, a comrade in arms; an assault at arms.
3. in heraldry, armorial bearings of a family, consisting of figures and colors borne in shields, banners, etc., as marks of dignity and distinction, and descending from father to son.
4. insignia of countries, corporations, etc. *small arms*; firearms of small caliber that can be carried, as rifles, carbines, pistols, etc. *to arms*; get ready to fight! a summoning to war or battle.
5. *to take up arms*; to arm for attack or defense; to enter a dispute.
6. *under arms*; having arms ready for use; ready for war.
7. *up in arms*; prepared to fight; hence, indignant.

**ar'mûre**, *n.* 1. armor. [Obs.]

2. a kind of ribbed woolen cloth woven so that it looks like chain mail.

**ar'my**, *n.* [ME. *armye*, *armey*; OFr. *armee*; It. *armata*; *L. armata*, *f. of armatus*, pp. of *armare*, to arm; *arma*, arms.]

1. a large organized body of men armed for war, especially on land; often it includes an air force.

2. a military unit, usually two or more army corps, together with auxiliary troops; field army.

3. the military forces of a nation as distinguished from its navy; the land forces.

4. a great number; a vast multitude.

5. a body of persons organized for some particular cause; as, the Salvation Army.

*army of occupation*; an army sent into a defeated country to ensure compliance with the terms of the peace treaty; the army of occupation exercises military rule of the territory.

*standing army*; an army maintained in peacetime, as well as in time of war, on a permanent organizational basis.

**Ar'my Air Fôr'ces**, formerly, the aviation branch of the United States Army.

**ar'my ant**, a foraging ant that travels in large groups, as the driver ant.

**ar'my corps** (kôr), a tactical military unit of two or more divisions with auxiliary services, usually commanded by a lieutenant general.

**ar'my list**, an official register of the commissioned officers of an army.

**Ar'my of the U-ni'ted Stâtes**, the United States Army, the Organized Reserves, the National Guard, and Selective Service personnel, collectively; organized temporarily during time of war or other national emergency.

**ar'my wôrm**, the larva of a moth, *Leucania unipuncta*; so called because vast numbers move like an army, destroying all vegetation in their path; also, any related species with similar habits.

**ar'nâ**, *n.* [Hind. *arnâ*.] one of the numerous varieties of wild buffalo, *Bos bubalus*, of India.

**ar'nee**, *n.* same as *arna*.

**Ar'ni-câ**, *n.* [prob. from *Plarmica*; Gr. *plarmikos*, causing to sneeze.]

1. a genus of plants of the order *Compositae*.

2. [a-] any plant of this genus, especially the perennial *Arnica montana*, or mountain arnica, bearing bright yellow flowers on long stalks with clusters of leaves at the base.

3. [a-] tincture of arnica, applied externally as a treatment for sprains, bruises, and ailments of a similar kind.

**ar'ni-cin**, *n.* in chemistry, a bitter resin that contains the active principle of arnica.

**Ar'nôld-lat**, *n.* a disciple of Arnold of Brescia, who, in the twelfth century, was executed for insurrection against Roman Catholic corruption.

**ar-not'tô**, *n.* same as *annatto*.

**ar'nut**, *n.* same as *earlham*.

**ar-ô-gl'ra** (-ô'gl'ra), *n.* [native Braz. name.] any one of several South American trees from which a medicinal resin is extracted.

**ar'old**, a. resembling or belonging to the *Arum* family.

**ar'old**, *n.* [*L. arum*; Gr. *aron*, wake robin, and *eidos*, shape, form.] any plant of the *Arum* family.

**Ar'ol'ds-ae**, *n.pl.* [*L.* from Gr. *aron*, the wake robin, and *eidos*, form.] same as *Araceae*.

**ar'old'e-ous**, a. araceous.

**ar'oint'**, **ar'oynt'**, *v.i.* [prob. coined by Shakespeare (*Macbeth* I, iii, 6).] begone; avaunt (usually with *thee*): used in the imperative. [Obs.]

**ar'ol'la**, *n.* [Fr. *arolle*.] a tree of the pine family, *Pinus Cembra*, found in Switzerland.

**ar'ô-mâ**, *n.* [ME. *aromat*; OFr. *aromat*; *L. aroma*; Gr. *arôma*, a sweet spice, a sweet smell.]

1. the fragrance of plants, or other substances; a pleasant, often spicy odor.

2. a characteristic quality or atmosphere; as, the *aroma* of culture.

*Syn.*—fragrance, perfume, savor.

**ar-ô-mat'ic**, **ar-ô-mat'ic-âl**, a. 1. fragrant; spicy; strong-scented; odoriferous; having an agreeable odor.

2. in chemistry, of or designating any of a series of benzene ring compounds, many of which have an odor or are derived from materials having an odor.

**ar-ô-mat'ic**, *n.* a plant or chemical characterized by a fragrant smell, and usually by a warm, pungent taste, as ginger.

**ar-ô-mat-i-zâ'tion**, *n.* the act of making aromatic.

**ar-ô-mâ-tize**, *v.t.*; aromatized, *pl., pp.*; aromatizing, *ppr.* to make aromatic; to infuse with an aromatic odor; to give a spicy scent or taste; to perfume.

**ar-ô-mâ-ti-zër**, *n.* that which, or one who, aromatizes.

**ar-ô-mâ-tous**, a. aromatic. [Obs.]

**ar-ô-se**, past tense of *arise*.

**ar-round'**, *prep.* 1. about; on all sides of; encircling; encompassing; in various places in or on; revolving about (a center or axis).

2. somewhat close to; about; as, *around* five pounds. [Colloq.]

**ar-round'**, *adv.* 1. in a circle; on every side; in circumference; in or to the opposite direction; in various places.

2. to a (specified or understood) place; as, come *around* to see us.

3. in the vicinity; about; near by; as, he visited *around*. [Colloq.]

*to have been around*; to have had wide experience; to be sophisticated. [Colloq.]

**ar-rous'âl**, *n.* the act of arousing.

**ar-rouse'**, *v.t.*; aroused, *pl., pp.*; arousing, *ppr.* [a- and ME. *rousen*, *rouzen*.]

1. to wake up; to awaken.

2. to excite into action; to stir up or put in motion; as, *to arouse* the dormant faculties.

*Syn.*—stimulate, provoke, animate, awaken, excite.

**ar-rouse'**, *v.i.* to become aroused.

**ar-rôw'**, *adv.* in a row; successively.

**ar-peg'giô** (-pej'ô), *n.*; *pl.* *ar-peg'giôs*, [It. *arpeggiare*, to play on a harp.]

1. in music, the sounding of the notes of a chord in rapid succession, as in harp playing, instead of simultaneously.

2. a chord so played.

**ar'pent**, *n.* [Fr. *arpen*; LL. *arapennes*; *L. arepennis*; a word of Celtic origin.] an old measure of land in France, equal to about an acre; retained in Louisiana, and Quebec, Canada.

**ar-pen-tâ'tôr**, *n.* a land surveyor. [Rare.]

**ar'pine**, *n.* arpent. [Obs.]

**ar'quâ-ted**, a. [*L. arcuare*, to bend like a bow, from *arcus*, bow.] arcuate; curved. [Rare.]

**ar'quë-bus**, *n.* same as *harquebus*.

**ar'quë-bus-âde**, *n.* same as *harquebusade*.

**ar'quë-bus-iër**, *n.* same as *harquebusier*.

**ar'qui-fôux** (âr'ki-fô), *n.* same as *alquifou*.

**ar-râ-câ'châ**, *n.* [Sp.] a Mexican plant, belonging to the genus *Arracacia*.

**Ar-râ-câ'ci-â** (-shi-â), *n.* [Sp., from a native name.] a genus of umbelliferous plants of the carrot family, growing in Mexico and South America.

**ar'râch**, *n.* same as *orach*.

**ar'rack**, *n.* [Fr. *arac*; Ar. *araq*, sweat, spirit, juice.] in the Orient, a strong alcoholic drink, especially that distilled from rice, molasses, or the sap of the cocoa palm.

**ar-râign'** (-rân'), *v.t.*; arraigned (-rând), *pl., pp.*; arraigning, *ppr.* [ME. *araynen*, *arēnen*; OFr. *arantier*; *L. ad*, to, and *ratio*, reason.]

1. in law, to call (a prisoner) before a court to stand trial.

2. to accuse; to charge with faults; to call to account or in question.

They will not *arraign* you for want of knowledge.

*Syn.*—accuse, attack, censure, impeach, inculpate.

**ar-râign'**, *v.t.* in English law, to appeal to; to demand. [Obs.]

**ar-râign'**, *n.* arraignment; as, clerk of the *arraigns*.

**ar-râign'ër**, *n.* one who arraigns.

**ar-râign'ment**, *n.* [Norm. *arresnement*, *ar-raynement*.]

1. the act of arraigning; the act of calling a person before a court to answer to a complaint or indictment and to plead guilty or not guilty.

2. a calling in question for faults; accusation.

**ar-râi'ment**, *n.* raiment. [Obs.]

**ar-range'**, *v.t.*; arranged (-rând), *pl., pp.*; arranging, *ppr.* [ME. *arayngen*, *arengen*; OFr. *aranger*; Fr. *arranger*, from *ad* and *ranger*, to set in order.]

1. to put in proper order; to sort systematically; to classify.

2. to adjust; to settle; to put in order; to prepare; as, *to arrange* details.

3. to adapt (a musical composition) to other instruments or voices than those for which it was written, or to a certain band or orchestra.

*Syn.*—class, dispose, place, range, group, adjust.

**ar-range'**, *v.i.* 1. to come to an agreement (with a person, about a thing).

2. to make plans; provide or prepare (with for or an infinitive).

3. in music, to write adaptations, especially as a profession.

**ar-range'ment**, *n.* 1. the act of putting in proper order; also, the state of being put in order.

2. that which is arranged or the result of arranging.

3. [usually *pl.*] a preparatory measure or plan; as, we have made *arrangements* for receiving company.

4. a settlement or adjustment by agreement; as, the parties have made an *arrangement* between themselves concerning their disputes.

5. a combination of parts; hence, loosely, a contrivance or apparatus.

6. the adaptation of a musical composition to other instruments or voices than those for which it was originally written, or to the style of a certain band or orchestra; also, a composition so adapted.

*Syn.*—classification, adjustment, agreement, disposition, grouping, disposal, order.

**ar-rân'gër**, *n.* one who or that which arranges.

**ar'rânt**, a. [a variant of *errant*.]

1. notorious; infamous; vile; as, an *arrant* rogue or coward.

2. wandering. [Obs.]

*Syn.*—consummate, notorious, flagrant, vile, utter.

**ar'rânt-ly**, *adv.* notoriously; infamously; shamefully.

**ar'râs**, *n.* [so called from *Arrâs*; from *L. Atre-bates*, a people of Belgic Gaul.] a tapestry; a wall hanging of tapestry.

**ar'râs**, *n.* [Sp.] in Spanish law, a marriage settlement.

**ar'râs**, *v.t.* to hang or furnish with an arras.

**ar-râs-ène'**, *n.* a silk or woolen material used for embroidery.

**ar-râs'trâ**, *n.* same as *arrasire*.

**ar-râs'trë**, *n.* [Sp. *arrasirar*, to drag along the ground; *L. ad*, to, and *radere*, to scrape.] in gold mining, a crude machine formerly used for ore crushing.

**ar'râs-wîse**, *adv.* same as *arriswise*.

**ar-rây'**, *n.* [ME. *arayen*; OFr. *areyer*, *arraier*; *L. ad*, to, and *res*, thing.]

1. regular order or arrangement; specifically, disposition of troops; as, in battle *array*.

2. an impressive collection or assemblage; especially, a body of men in order; hence, military force; troops in order.

A gallant *array* of nobles and cavaliers.

—Prescott.

**dynatron****eager**

**dý'nà-tron**, *n.* 1. a four-electrode vacuum tube in which the plate and grid potentials are such that the secondary discharge of electrons from the plate causes a decrease in the plate current simultaneously with an increase in the plate potential: it is often used as an oscillator.  
2. a mesotron.

**dýne**, *n.* [abbrev. of *dynam*, from Gr. *dynamis*, power.] the unit of force which in one second can alter the velocity by one centimeter per second of a mass of one gram: the unit of force in the C.G.S. (metric) system.

**dý''ò-cae''trí-á-con''ta-hé'drôn**, *n.* [Gr. *dýo kai triakonta*, thirty-two, and *hedron*, a seat, base.] in geometry, a solid with thirty-two faces.

**dý-oth'el-iam**, *n.* [Gr. *dýo*, two, and *thelein*, to will.] the doctrine that the will of Christ was twofold, human and divine.

**dý-oth'e-lite**, *n.* an advocate of dyothelism.

**dýs-**, [from Gr. *dýs-*, hard, ill, bad.] a prefix meaning *hard*, *ill*, *bad*, *difficult*, as in *dýs-gene-sis*, *dýsnomy*.

**dýs-ae-s-thé'si-á**, *n.* same as *dýsesthesia*.

**dýs-ár-thrí-á**, *n.* [dýs-, and Gr. *arthron*, a joint.] defective articulation in speaking, resulting from a disease of the central nervous system.

**dýs-ár-thró'sis**, *n.* [dýs-, and Gr. *arthron*, a joint.] disability or disease of a joint.

**dýs'chrô-mà-top'si-á**, *n.* color blindness; difficulty in distinguishing colors.

**dýs-grá'si-á** (-zhí-á), *n.* [Gr. *dýskrasia*, bad temperament; *dýs-*, bad, and *krasis*, a mixture, from *kerannynai*, to mix.] a diseased condition of the body, marked by general ill health and debility: also written *dýscrasia*.

**dýs-grá'sic**, *a.* characterized by *dýscrasia*.

**dýs-grá'site**, *n.* [dýs-, and Gr. *krasis*, a mixture.] a lustrous, grayish mineral made up of antimony and silver.

**dýs-grá'sy**, *n.* *dýscrasia*.

**dýs-en-ter'ic**, **dýs-en-ter'ic-ál**, *a.* 1. pertaining to dysentery.

2. afflicted with dysentery.

**dýs'en-ter'y**, *n.* [L. *dysentēria*; Gr. *dysentēria*, dysentery; *dýs-*, bad, and *enteron*, pl. *entera*, the bowels.] any of various intestinal diseases characterized by inflammation, abdominal pain, toxemia, and diarrhea with bloody, mucous feces.

**dýs-es-thé'si-á**, *n.* impairment of any of the senses.

**dýs-fuñ'ction**, *n.* [from *dýs-*, and *function*.] in medicine, abnormal, impaired, or incomplete functioning of an organ or part.

**dýs-gé-ne's'ic**, *a.* affected by dysgenesis; relating or pertaining to dysgenesis.

**dýs-gen'e-sis**, *n.* [dýs-, and Gr. *genesis*, birth.] lack of fertility; especially, a condition of only partial fertility, as in hybrids which do not breed among themselves, but may with the parent stock. The mule is an example.

**dýs-gen'ic**, *a.* [dýs-, and Gr. *genos*, race, family.] in biology, causing deterioration of hereditary qualities: opposed to *eugenic*.

**dýs-gen'ics**, *n.pl.* [construed as sing.] 1. the study of dysgenic trends in a population: opposed to *eugenics*.

2. intermarriage of hereditarily defective individuals.

**dýs-i-drô'sis**, *n.* state of abnormal secretion of sweat; also, a condition in which vesicles form on the palms of the hands and soles of the feet.

**dýs-lá'lli-á**, *n.* difficulty in articulation of speech sounds.

**dýs-lex'i-á**, *n.* [dýs-, and Gr. *lexis*, speech.] loss of power to grasp the meaning of that which is read.

**dýs-lô'gí-á**, *n.* difficulty in speech caused by impairment in the faculty of reasoning.

**dýs-lô'gís'tic**, *a.* [dýs-, and Gr. *logos*, discourse.] not flattering; disparaging: opposed to *eulogistic*.

**dýs-lú'ite**, *n.* [dýs-, and Gr. *lyein*, to loose, dissolve.] a variety of gahnite, or zinc spinel, containing iron and manganese.

**dýs'men-ô-r-rhé'á** (-ré'á), *n.* [dýs-, and Gr. *mên*, a month, and *rhoia*, a flowing.] difficult menstruation, often accompanied by pain.

**dýs'mê-rô-gen'e-sis**, *n.* [dýs-, and Gr. *meros*, part, and *genesis*, birth.] in biology, generation marked by irregularity of constituent parts, differing in function, time of budding, etc.: opposed to *eumero-genesis*.

**dýs'mê-rô-morph**, *n.* [dýs-, and Gr. *meros*, part, and *morphê*, shape.] in biology, a form resulting from dysmerogenesis.

**dýs'nô-my**, *n.* [Gr. *dysnomia*, lawlessness, a bad constitution; *dýs-*, bad, and *nomos*, law.] bad legislation; the enactment of bad laws. [Rare.]

**dýs'ô-díle**, *n.* [Gr. *dýsôdês*, ill-smelling; *dýs-*, bad, and *ozein*, to smell.] a hydrocarbon of a greenish or yellowish-gray color, in masses composed of thin layers.

**dýs'ô-dont**, *n.* [dýs-, and Gr. *odontos*, a tooth.] in conchology, monomyarian.

**dýs'ô-pi-á**, **dýs-op'sy**, *n.* [dýs-, and Gr. *opsis*, view, sight.] dimness of sight.

**dýs'ô-rex'i-á**, *n.* [Gr. *dýsorexia*, feebleness of appetite; *dýs-*, bad, and *orexis*, appetite.] a lack of appetite.

**dýs'pá-thy**, *n.* [Gr. *dýspatheia*, from *dýspathês*, impatient of suffering, impassive; *dýs-*, ill, and *pathos*, feeling.] lack of sympathy or passion.

**dýs-pep'si-á**, *n.* [L. *dyspepsia*; Gr. *dyspepsia*, indigestion, from *dýs-peptos*; *dýs-*, bad, and *peptos*, from *peplein*, to soften, cook, digest.] indigestion; impaired digestion.

**dýs-pep'sy**, *n.* *dyspepsia*. [Now Dial. or Colloq.]

**dýs-pep'tic**, *n.* a person afflicted with *dyspepsia*.

**dýs-pep'tic**, *a.* 1. afflicted with indigestion; as, a *dyspeptic* person.

2. pertaining to or having the characteristics of *dyspepsia*; as, a *dyspeptic* complaint.

3. taking a morbid view of things; gloomy; grouchy; as, a *dyspeptic* writer.

**dýs-pep'tic-ál**, *a.* same as *dyspeptic*.

**dýs-pep'tic-ál-ly**, *adv.* 1. in the manner of a *dyspeptic*.

2. with *dyspepsia*.

**dýs-phá'gí-á**, **dýs-phá'gy**, *n.* [dýs-, and Gr. *phagein*, to eat.] in medicine, difficulty in swallowing.

**dýs-phá'si-á**, *n.* [dýs-, and Gr. *phasis*, speech.] impairment of the ability to speak or, sometimes, to understand language, as the result of brain injury.

**dýs-phô'ni-á**, *n.* [Gr. *dysphonia*; *dýs-*, bad, and *phônê*, voice.] difficulty in speaking as a result of a malformation or disease of the organs of speech.

**dýs-phô'ri-á**, *n.* [Gr. *dysphoria*; *dýs-*, hard, and *pherein*, to bear.] in psychology, a generalized feeling of ill-being; especially, an abnormal feeling of anxiety, discontent, physical discomfort, etc.

**dýs-pnê'á**, **dýs-pnoe'á**, *n.* [L., from Gr. *dyspnoia*; *dýs-*, hard, and *pnein*, to breathe.] difficult or painful breathing.

**dýs-pnê'ál**, **dýs-pnoe'ál**, *a.* of *dyspnea*.

**dýs-pnê'ic**, **dýs-pnoe'ic**, *a.* having or caused by *dyspnea*.

**dýs-pnô'ic**, *a.* same as *dyspneic*.

**dýs-prô'si-um**, *n.* [Mod. L., from Gr. *dysprositos*, difficult of access; *dýs-*, hard, and *prosi-tos*, approachable.] a chemical element of the rare-earth group: symbol, Dy; atomic weight, 162.50; atomic number, 66: it is one of the most magnetic of all known substances.

**dýs'te-lê-ol'ô-gy**, *n.* [coined by Haeckel, from *dýs-*, and Gr. *telos*, end, purpose, and *-logia*, from *legein*, to speak.] that branch of physiology which treats of the apparent purposelessness observable in living organisms in connection with rudimentary organs.

**dýs-thym'ic**, *a.* [Gr. *dysthymikos*, from *dys-thymia*, despondency, despair; *dýs-*, bad, and *thymos*, spirit, courage.] afflicted with chronic melancholy; depressed in spirits.

**dýs-tô'ci-á** (-shi-á), *n.* [Gr. *dystokia*; *dýs-*, hard, and *-tokia*, from *liktein*, to bear.] painful childbirth; difficult parturition.

**dýs-tô'pi-á**, *n.* [dýs-, and *utopia*.] a hypothetical place, state, or situation in which conditions and the quality of life are dreadful.

**dýs'trô-phy**, *n.* [dýs-, and Gr. *trophê*, from *trephein*, to nourish.] abnormal or defective nourishment; unnatural nutrition.

**muscular dystrophy**; a chronic, noncontagious disease characterized by a progressive wasting of the muscles.

**dýs-û'ri-á**, **dýs-û-ry**, *n.* [dýs-, and Gr. *ouron*, urine.] difficulty or pain in discharging the urine.

**dýs-û'ric**, *a.* relating to or suffering with *dysuria*.

**džê'ren**, **džê'rôn**, *n.* [Mongolian name.] the Chinese antelope, a swift animal, *Procapra gutturosa*, inhabiting the dry, arid deserts of central Asia, Tibet, China, and southern Siberia.

**E**

**E, e** (ē), *n.*; *pl.* **E's**, **e's**, **Es**, **es** (ēz), 1. the fifth letter of the English alphabet: from the Greek *epsilon*, a borrowing from the Phoenician.

2. a sound of E or e.

3. a type or impression for E or e.

4. a symbol for the fifth in a sequence or group.

**E, e** (ē), *a.* 1. of E or e.

2. fifth in a sequence or group.

**E**, *n.* 1. an object shaped like E.

2. a Roman numeral for 250; with a superior bar (**E**), 250,000.

3. in chemistry, the symbol for erbium.

4. in education, (a) a grade fifth in quality, usually equivalent to *condition*; (b) sometimes, a grade first in quality, meaning excellent.

5. in music, (a) the third tone or note in the scale of C major, or the fifth in the scale of A minor; (b) a key, string, etc. producing this tone; (c) the scale having E as the key-note.

6. in physics, the symbol for, (a) the modulus of elasticity; (b) electromotive force.

**E**, *a.* shaped like E.

**ē-**, a prefix used instead of *ex-* before many consonants, meaning *out*, *out of*, *from*, *without*, as in *eject*, *egress*.

**ēach**, *a.* [ME. *eche*, *ech*, *ēlc*, *elc*; AS. *ēlc*; *a.* always, and *gēlc*, like; G. *jeglich*, each.] every one of two or more considered or treated distinctly from the rest; as, *each* person was called upon to speak.

**ēach**, *pron.* every one of two or more consid-

ered individually; each one; as, *each* did his share; *each* of them heard the remark.

*each other*; each the other; as, they despise *each other*, that is, *each* despises the other.

**ēach'where** (-hwär), *adv.* everywhere. [Obs.]

**ēad'iah**, *n.* eddiah. [Obs.]

**ēa'gēr**, *a.* [ME. *eger*, *egre*; OFr. *egre*, *aigre*; L. *acer*, *acris*, sharp, keen.]

1. keenly desiring; wanting very much; impatient or anxious; ardent; as, the soldiers were *eager* to engage the enemy.

2. sharp; sour; acid. [Obs.]

3. sharp; keen; biting; severe. [Archaic.]

4. brittle; inflexible; not ductile. [Obs.]

**Syn.**—earnest, fervent, zealous, enthusiastic, vehement, intense, fervid.

**ēa'gēr**, *n.* same as *eagre*.

# EXHIBIT 25

## **EXHIBIT 25**

**REDACTED IN ITS ENTIRETY**

# EXHIBIT 26

Analytical Services  
Technical Service Request

CRYOVAC

W. R. Grace & Co.  
Cryovac Division

PERMANENT

No. **1-6777**

Date 4-24-85

Proj. Controller Appr. *[Signature]* Dept. No. 137

Originator GAUTAM P. SHAH

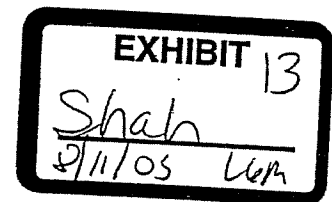
Dept. Mgr. Appr. *FDS/H. [Signature]* Proj. No. 3743

Subject DETERMINE THE PROPERTIES OF SEVEN LAYER OXYGEN BARRIER SHRINK FILMS

Man Hours: 52

## Justification For Request and Sample Background:

The properties of seven layer oxygen barrier shrink films with nylon and EVOH will help determine the application for the film.

*Priority  
A.P.B.*DISTRIBUTION

P. R. Boice  
S. L. Fuller  
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J. J. Walters  
N. D. Bornstein  
K. Cannon  
B. C. Childress  
Research File  
Technical File (2)  
Ann Wood

RESTRICTED

Originator GAUTAM P. SHAHNo. 1-6777Subject DETERMINE THE PROPERTIES OF SEVEN LAYER OXYGEN BARRIER SHRINK FILMS.

## Sample Identification:

FDX 1570: LLDPE-EVA/ADHESIVE/NYLON/EVAL/NYLON/ADHESIVE/LLDPE  
CA6 / F / CA6 / -EVAFDX 1572: EPC/ADHESIVE/NYLON/EVAL/NYLON/ADHESIVE/EPC  
CA6 / K / CA6 /

For A.S. Use Only.

Scheduled 4/24/05 D.D.SRoute To R.F.For Comments 8-30-05Approved 2/6/05 D.D.SSample Received with TSR  
Yes      No     Sample Disposition  
     Destroy  
     Return to Me

## Services Requested:

X Tensile & Elongation                     X HazeX Modulus at                          Total TransmissionX Tear Propagation                     X GlossX Free Shrink at 200<sup>0</sup>, 220<sup>0</sup>, 240<sup>0</sup>, 260<sup>0</sup>, 280<sup>0</sup>, 300<sup>0</sup> FX Density at 23°CX Shrink Tension at 200<sup>0</sup>, 220<sup>0</sup>, 240<sup>0</sup>, 260<sup>0</sup>, 280<sup>0</sup>, 300<sup>0</sup> FX Moisture Vapor TransmissionX Ball Burst at                     X Oxygen Transmission

## Other Tests and/or Special Instructions:

Oxygen transmission at 0% to 100% RH @ room temperature

Clarity

COF IN/IN and OUT/OUT

Layer Gauge (all layers)

Interply bond strength (between all layers)

COMMENTS: TSR 1-6777

By: G. P. Shah

5 February 1986

Both FDX-1570 and FDX-1572 have the nominal thickness of 1 mil but the actual thickness of FDX-1570 is much higher at 1.29 mil. The Nylon CA6 co-polymer layers of the films are significantly out of balance with Nylon missing or very thin at the few places in the FDX-1572 film.

There is no significant difference in the tensile and elongation properties of the film. Both films have good impact resistance. As expected the FDX-1572 being based on polypropylene resin is stiffer than FDX-1570 film. The FDX-1570 has an excellent resistance to tear propagation compared to the FDX-1572 film. There is no significant difference in the water vapor transmission rates for both the films and the transmission rate for both the films is not much different than other non-barrier shrink films. FDX-1570 shows much higher shrinks at all temperatures. There is no difference in the shrink tensions of the films.

As expected the FDX-1570 has higher density than FDX-1570. For the unexplained reasons FDX-1570 film has poor film to film slip. Previously, the films made with similar skins and similar additive package exhibited much better film to film slip. Also FDX-1570 has much better optical properties than FDX-1572 even though in past polypropylene skins have provided better optics.

FDX-1570 shows very good interply bond strength compared to the FDX-1572. In case of FDX-1570, the bond between the layers is stronger than the strength of the material. The poor bond strength of FDX-1572 may have been due to the poor adhesive property of Modic P310H in bonding polypropylene to Nylon.

-2-

TSR Comments: 1-6777

The oxygen transmission data show the difference in barrier properties of EVAL-F and EVAL-K. The EVAL-F which gives superior barrier to oxygen transmission when dry but poor barrier when wet is used in FDX-1570. The EVAL-K which gives somewhat lower barrier to oxygen transmission when dry but gives better barrier than EVAL-F when wet is used in the FDX-1572 film.

In conclusion, the FDX-1570 appears to be a better seven layer oxygen barrier film due to its superior film properties.

GPS/bg

MICROSCOPY LABORATORY REPORT

TSR 1-6777

Written by: Kenneth Cannon <sup>KIC</sup>

Approved by: Blaine Childress <sup>BCC</sup>

SEVEN LAYER OXYGEN BARRIER

SHRINK FILMS

Two samples of barrier shrink film was submitted to this laboratory for optical thickness gauging. The samples were first cross-sectioned, then gauged using the Unitron Metallograph @ 400X. The results are recorded on the data sheet included with this report.

Research Notebook Page 535D

Man Hours: 6

KC/mlf 8/28/85

12782885/2/1

PROBLEM NO. TSR 1-6777 DATE 8-19 19 85SUBJECT: Optical Thickness Gauges (mils)

AMPLE	LAYER	SITE 1	SITE 2	SITE 3	SITE 4	SITE 5	SITE 6	SITE 7	SITE 8	SITE 9	SITE 10	AVG	STD. DEV.	95% CONF.
1570	LDPE/EVA	.94	.36	.31	.35	.42	.36	.41	.47	.45	.39	0.39	.05	.04
	adhesive	.13	.16	.11	.19	.15	.16	.18	.18	.18	.14	0.16	.02	.02
	nylon	.09	.09	.10	.08	.11	.09	.10	.12	.09	.11	0.10	.01	.01
	EVA	.14	.13	.13	.15	.13	.13	.18	.17	.12	.12	0.14	.02	.01
	nylon	.03	.02	.03	.05	.04	.04	.05	.05	.04	.05	0.04	.01	.01
	adhesive	.15	.12	.09	.10	.14	.12	.15	.17	.12	.13	0.13	.02	.02
	LDPE/EVA	.18	.22	.24	.35	.43	.39	.56	.45	.34	.29	0.35	.12	.08
	Total	1.06	1.10	0.99	1.26	1.42	1.29	1.63	1.61	1.34	1.23	1.29	.22	.15
1572	EPC	.35	.36	.42	.37	.34	.30	.35	.32	.31	.39	0.35	.04	.03
	adhesive	.10	.06	.09	.09	.07	.10	.10	.10	.09	.11	0.09	.02	.01
	nylon	.06	.06	.09	.09	.08	.05	.04	.05	.04	.05	0.06	.02	.01
	EVA	.16	.13	.15	.18	.13	.11	.14	.14	.15	.14	0.14	.02	.01
	nylon	.01	.02	.01	0	0	.02	.02	.02	.02	0	0.01	.01	.01
	adhesive	.10	.06	.10	.10	.06	.08	.08	.08	.10	.12	0.09	.02	.01
	EPC	.38	.30	.33	.27	.24	.27	.30	.35	.33	.32	0.31	.04	.03
	Total	1.16	0.99	1.19	1.10	0.92	0.93	1.03	1.06	1.04	1.13	1.06	.09	.07

CONFIDENTIAL

SIGNED

  
8-19-85
UNDERSTOOD AND  
WITNESSED:

  
8-19-85

No

535

- 1 -

TSR 1-6777

## DETERMINE THE PROPERTIES OF SEVEN LAYER OXYGEN BARRIER SHRINK FILMS

## TENSILE AND ELONGATION AT BREAK AND 73 DEG.F.

SAMPLE	LONGITUDINAL			TRANSVERSE		
	TENSILE PSI	ELONG. %	GAUGE : MILS	TENSILE PSI	ELONG. %	GAUGE MILS
FDX 1570						
AVERAGE	106.3X100	72.	1.19	115.5X100	77.	0.99
STD.DEV.	4.1X100	5.	0.08	4.5X100	8.	0.03
* 95% C.L.	6.5X100	9.	0.12	7.2X100	13.	0.06

## FDX 1572

AVERAGE	124.0X100	66.	1.11	116.0X100	64.	1.11
STD.DEV.	9.1X100	7.	0.03	4.3X100	3.	0.01
* 95% C.L.	14.5X100	11.	0.05	6.8X100	5.	0.02

=====

## MODULUS AT 73 DEG.F.

SAMPLE	LONGITUDINAL		TRANSVERSE	
	PSI	GAUGE, MILS	PSI	GAUGE, MILS

## FDX 1570

AVERAGE	100.7X1000	1.38	107.1X1000	1.06
STD.DEV.	7.3X1000	0.07	2.5X1000	0.03
* 95% C.L.	11.6X1000	0.11	4.0X1000	0.05

## FDX 1572

AVERAGE	146.1X1000	1.27	140.2X1000	1.16
STD.DEV.	6.9X1000	0.03	3.3X1000	0.03
* 95% C.L.	10.9X1000	0.06	5.3X1000	0.05

=====

## TEAR PROPAGATION AT 73 DEG.F.

SAMPLE	LONGITUDINAL		TRANSVERSE	
	GRAMS	GAUGE, MILS	GRAMS	GAUGE, MILS

## FDX 1570

AVERAGE	21.55	1.37	117.94	1.42
STD.DEV.	2.93	0.06	79.17	0.05
* 95% C.L.	4.66	0.09	125.97	0.08

\* 95% CONFIDENCE LIMITS  
FOR THE AVERAGE, N=4

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TSR 1-6777

DETERMINE THE PROPERTIES OF SEVEN LAYER OXYGEN BARRIER SHRINK FILMS

TEAR PROPAGATION AT 73 DEG.F.  
LONGITUDINAL

TRANSVERSE

SAMPLE	GRAMS	GAUGE, MILS	GRAMS	GAUGE, MILS
FDX 1572				
AVERAGE	5.78	1.14	6.60	1.18
STD.DEV.	0.32	0.04	0.61	0.06
* 95% C.L.	0.51	0.06	0.96	0.10

=====

BALL BURST IMPACT AT 73 DEG.F.  
1.00 IN. DIAM. SPHERE HD.

SAMPLE	CM-KG	GAUGE, MILS
--------	-------	-------------

FDX 1570

AVERAGE	25.0	1.38
STD.DEV.	2.2	0.06
* 95% C.L.	3.4	0.10

FDX 1572

AVERAGE	14.0	1.13
STD.DEV.	0.8	0.03
* 95% C.L.	1.3	0.04

=====

WATER VAPOR TRANSMISSION AT 100 DEG.F.

SAMPLE	GRAMS/(24HRS,100SQ.IN.) AT 100%RH	GAUGE, MILS
--------	-----------------------------------	-------------

FDX 1570

0.61	1.40
0.94	1.04
0.78	1.19

FDX 1572

0.75	1.24
0.83	1.04
0.75	1.12

\* 95% CONFIDENCE LIMITS  
FOR THE AVERAGE, N=4

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TSR 1-6777

DETERMINE THE PROPERTIES OF SEVEN LAYER OXYGEN BARRIER SHRINK FILMS

FREE SHRINK AT 200 DEG.F.

LONGITUDINAL

TRANSVERSE

SAMPLE	PERCENT	PERCENT
--------	---------	---------

FDX 1570

AVERAGE	20.	25.
STD.DEV.	2.	1.
* 95% C.L.	3.	2.

FDX 1572

AVERAGE	20.	24.
STD.DEV.	1.	2.
* 95% C.L.	2.	3.

=====

FREE SHRINK AT 220 DEG.F.

LONGITUDINAL

TRANSVERSE

SAMPLE	PERCENT	PERCENT
--------	---------	---------

FDX 1570

AVERAGE	34.	39.
STD.DEV.	2.	1.
* 95% C.L.	3.	1.

FDX 1572

AVERAGE	29.	34.
STD.DEV.	3.	3.
* 95% C.L.	4.	4.

=====

FREE SHRINK AT 240 DEG.F.

LONGITUDINAL

TRANSVERSE

SAMPLE	PERCENT	PERCENT
--------	---------	---------

FDX 1570

AVERAGE	67.	60.
STD.DEV.	2.	2.
* 95% C.L.	3.	4.

\* 95% CONFIDENCE LIMITS  
FOR THE AVERAGE. N=4

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TSR 1-6777

## DETERMINE THE PROPERTIES OF SEVEN LAYER OXYGEN BARRIER SHRINK FILMS

FREE SHRINK AT 240 DEG.F.

LONGITUDINAL

TRANSVERSE

SAMPLE	PERCENT	PERCENT
FDX 1572	:	:
AVERAGE	: 46.	: 46.
STD.DEV.	: 1.	: 1.
* 95% C.L.	: 2.	: 2.

=====

FREE SHRINK AT 260 DEG.F.

LONGITUDINAL

TRANSVERSE

SAMPLE	PERCENT	PERCENT
FDX 1570	:	:
AVERAGE	: 72.	: 67.
STD.DEV.	: 1.	: 3.
* 95% C.L.	: 2.	: 5.

FDX 1572

AVERAGE	: 57.	: 58.
STD.DEV.	: 1.	: 1.
* 95% C.L.	: 2.	: 2.

=====

FREE SHRINK AT 280 DEG.F.

LONGITUDINAL

TRANSVERSE

SAMPLE	PERCENT	PERCENT
FDX 1570	:	:
AVERAGE	: 73.	: 68.
STD.DEV.	: 1.	: 1.
* 95% C.L.	: 2.	: 1.

FDX 1572

AVERAGE	: 60.	: 59.
STD.DEV.	: 1.	: 1.
* 95% C.L.	: 2.	: 2.

\* 95% CONFIDENCE LIMITS  
FOR THE AVERAGE, N=4

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TSR 1-6777

DETERMINE THE PROPERTIES OF SEVEN LAYER OXYGEN BARRIER SHRINK FILMS

FREE SHRINK AT 300 DEG.F.

LONGITUDINAL

TRANSVERSE

SAMPLE	PERCENT	PERCENT
FDX 1570		
AVERAGE	72.	68.
STD.DEV.	1.	1.
* 95% C.L.	1.	2.
FDX 1572		
AVERAGE	60.	58.
STD.DEV.	2.	4.
* 95% C.L.	4.	6.

=====

SHRINK PROPERTIES AT 200 DEG.F.

LONGITUDINAL

SAMPLE	FORCE LBS	TENSION PSI	GAUGE MILS	TRANSVERSE FORCE LBS	TENSION PSI	GAUGE MILS
FDX 1570						
AVERAGE	0.343	338.	1.01	0.603	446.	1.35
STD.DEV.	0.026	18.	0.03	0.009	13.	0.03
* 95% C.L.	0.042	28.	0.04	0.014	21.	0.04
FDX 1572						
AVERAGE	0.359	325.	1.10	0.525	457.	1.15
STD.DEV.	0.063	58.	0.01	0.014	22.	0.03
* 95% C.L.	0.101	92.	0.02	0.023	34.	0.05

=====

SHRINK PROPERTIES AT 220 DEG.F.

LONGITUDINAL

SAMPLE	FORCE LBS	TENSION PSI	GAUGE MILS	TRANSVERSE FORCE LBS	TENSION PSI	GAUGE MILS
FDX 1570						
AVERAGE	0.375	332.	1.13	0.650	440.	1.48
STD.DEV.	0.034	36.	0.05	0.035	5.	0.08
* 95% C.L.	0.054	57.	0.08	0.055	9.	0.12

\* 95% CONFIDENCE LIMITS  
FOR THE AVERAGE, N=4

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TSR 1-6777

## DETERMINE THE PROPERTIES OF SEVEN LAYER OXYGEN BARRIER SHRINK FILMS

## SHRINK PROPERTIES AT 220 DEG.F.

SAMPLE	LONGITUDINAL			GAUGE : MILS	TRANSVERSE		
	FORCE LBS	TENSION PSI			FORCE LBS	TENSION PSI	GAUGE MILS
FDX 1572							
AVERAGE	0.379	339.	1.13	:	0.504	464.	1.09
STD.DEV.	0.031	59.	0.11	:	0.009	12.	0.02
* 95% C.L.	0.049	94.	0.18	:	0.014	19.	0.03

## SHRINK PROPERTIES AT 240 DEG.F.

SAMPLE	LONGITUDINAL			GAUGE : MILS	TRANSVERSE		
	FORCE LBS	TENSION PSI			FORCE LBS	TENSION PSI	GAUGE MILS
FDX 1570							
AVERAGE	0.590	425.	1.39	:	0.674	453.	1.49
STD.DEV.	0.026	24.	0.03	:	0.021	14.	0.03
* 95% C.L.	0.042	39.	0.04	:	0.033	22.	0.05

## FDX 1572

AVERAGE	0.453	472.	0.96	:	0.530	490.	1.08
STD.DEV.	0.013	14.	0.02	:	0.018	16.	0.03
* 95% C.L.	0.021	22.	0.03	:	0.028	25.	0.05

## SHRINK PROPERTIES AT 260 DEG.F.

SAMPLE	LONGITUDINAL			GAUGE : MILS	TRANSVERSE		
	FORCE LBS	TENSION PSI			FORCE LBS	TENSION PSI	GAUGE MILS
FDX 1570							
AVERAGE	0.605	424.	1.43	:	0.490	451.	1.09
STD.DEV.	0.033	10.	0.05	:	0.012	20.	0.06
* 95% C.L.	0.053	16.	0.08	:	0.019	31.	0.10

## FDX 1572

AVERAGE	0.439	434.	1.01	:	0.514	479.	1.07
STD.DEV.	0.015	22.	0.03	:	0.032	26.	0.02
* 95% C.L.	0.024	35.	0.05	:	0.051	42.	0.03

\* 95% CONFIDENCE LIMITS  
FOR THE AVERAGE, N=4

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TSR 1-6777

DETERMINE THE PROPERTIES OF SEVEN LAYER OXYGEN BARRIER SHRINK FILMS

SHRINK PROPERTIES AT 280 DEG.F.

SAMPLE	LONGITUDINAL			TRANSVERSE		
	FORCE LBS	TENSION PSI	GAUGE MILS	FORCE LBS	TENSION PSI	GAUGE MILS
FDX 1570						
AVERAGE	0.420	396.	1.06	0.424	426.	1.00
STD.DEV.	0.021	16.	0.01	0.019	21.	0.01
* 95% C.L.	0.034	25.	0.02	0.030	34.	0.02

FDX 1572

AVERAGE	0.459	437.	1.06	0.486	446.	1.09
STD.DEV.	0.017	29.	0.10	0.024	13.	0.04
* 95% C.L.	0.027	46.	0.16	0.038	21.	0.06

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SHRINK PROPERTIES AT 300 DEG.F.

SAMPLE	LONGITUDINAL			TRANSVERSE		
	FORCE LBS	TENSION PSI	GAUGE MILS	FORCE LBS	TENSION PSI	GAUGE MILS
FDX 1570						
AVERAGE	0.350	341.	1.03	0.460	402.	1.16
STD.DEV.	0.017	17.	0.03	0.061	29.	0.23
* 95% C.L.	0.027	28.	0.04	0.097	46.	0.37

FDX 1572

AVERAGE	0.490	415.	1.18	0.446	410.	1.09
STD.DEV.	0.052	45.	0.04	0.018	16.	0.00
* 95% C.L.	0.082	71.	0.07	0.029	26.	0.00

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DENSITY AT 23 DEG. C.

SAMPLE	GRAMS/CC
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FDX 1570

0.9649

0.9654

\* 95% CONFIDENCE LIMITS  
FOR THE AVERAGE, N=4

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TSR 1-6777

DETERMINE THE PROPERTIES OF SEVEN LAYER OXYGEN BARRIER SHRINK FILMS

DENSITY AT 23 DEG. C.

SAMPLE	GRAMS/CC
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FDX 1572

0.9431

0.9434

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COEFFICIENT OF FRICTION (ASTM SLED) AT 73 DEG.F.

SAMPLE	IN/IN STATIC KINETIC	OUT/OUT STATIC KINETIC
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FDX 1570

AVERAGE 3.338 BLOCKED 3.050 BLOCKED

STD.DEV. 0.283 0.180

\* 95% C.L. 0.450 0.286

FDX 1572

AVERAGE 0.879 0.313 0.460 0.269

STD.DEV. 0.212 0.053 0.058 0.013

\* 95% C.L. 0.337 0.084 0.092 0.020

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OPTICAL PROPERTIES AT 73 DEG.F.

SAMPLE	HAZE %	TOTAL TRANSMISSION %	CLARITY %	GLOSS 45 DEG.	GAUGE MILS
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FDX 1570

AVERAGE 2.4 66.7 91. 1.20

STD.DEV. 0.3 10.6 2. 0.02

\* 95% C.L. 0.4 16.8 4. 0.03

FDX 1572

AVERAGE 2.6 32.8 85. 1.10

STD.DEV. 0.1 11.2 3. 0.05

\* 95% C.L. 0.2 17.8 4. 0.08

\* 95% CONFIDENCE LIMITS  
FOR THE AVERAGE, N=4